

REMARKS

Claims 1-10 are currently pending in the application. Claim 1 is the only independent claim.

In the office action, claims 1-9 were rejected under 35 USC 103(a) as being unpatentable over Fuderer (4,650,651) in view of Bertaux et al. (EP 776959) and further in view of Parkhurst (2,324,172). Claim 10 was rejected under 35 USC 103(a) as being unpatentable over Fuderer, in view of Bertaux et al., and Parkhurst, and further in view of Eilers et al. (EP 668342).

The present invention is directed to a process for the preparation of a gas containing hydrogen and carbon monoxide (Syngas) and its conversion to a hydrocarbons containing stream using a Fischer-Tropsch process. In this process, a carbonaceous feedstock is partially oxidized in a reactor vessel to obtain an effluent comprising a first gaseous mixture of hydrogen and carbon monoxide. A carbonaceous feedstock is also catalytically steam reformed in a convective steam reformer to obtain a steam reforming product. The steam to carbon molar ratio of the feed to the reformer is below 1. The steam reformer product is fed to the upper end of the partial oxidation reactor and mixed with the effluent to form a mixture. This mixture of gases is then used to heat the reactor tubes in the steam reformer. The mixture of hydrogen and carbon monoxide are then converted using a Fischer-Tropsch process into a hydrocarbons containing stream.

The Fuderer reference is directed to an integrated primary and secondary catalytic steam reforming apparatus and method. In this process, a hydrocarbon feed is passed through a primary reforming zone comprising a plurality of catalyst filled tubes. The effluent from this reforming zone passes to a reaction space where hydrocarbons and oxygen are combusted. The gaseous mixture then passes through a second reforming zone. The effluent from the second reforming zone then passes through the shell side of the first reforming zone to provide heat for the primary reforming reaction. As set forth in column 8, lines 54-56 of Fuderer, the mole ratio of steam to hydrocarbon feed in the primary reformer unit is from about 2 to 1 to about 4 to 1. The patent goes on to teach in column 9, lines 5-13 that a portion of the overall feed can be bypassed to the secondary reforming zone which results in an "exceptionally low overall steam/hydrocarbon feed ratio" between about 1.6 and 2.2.

The present invention, on the other hand, has a steam to carbon molar ratio below 1.

There is no teaching or suggestion in the Fuderer reference of having a steam to carbon ratio below one. The range covered by the present application does not overlap the

steam to carbon ratio disclosed in Fuderer. Accordingly, a person of ordinary skill in the art could not optimize Fuderer within the disclosed ranges to obtain the presently claimed invention. It is only by hindsight, that one of skill in the art having the teachings of Fuderer before him would be able to arrive at the present invention.

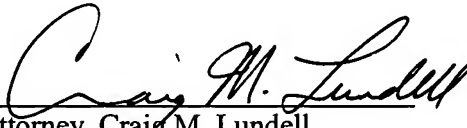
The Examiner has not cited anything in the other references which would suggest modifying Fuderer to have the lower steam to carbon ratio as claimed by the present invention. Accordingly, Applicant respectfully submits that the invention of claim 1 would not have been obvious over the cited references. Inasmuch as the remaining claims all depend from claim 1, they are also considered to be patentable over the cited references.

In view of the foregoing, Applicant submits that the claims are in condition for allowance and favorable consideration by the Examiner is requested. Should the Examiner find any impediment to the allowance of the claims which could be corrected by telephone interview with the undersigned, the Examiner is requested to initiate such an interview.

Respectfully submitted,

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